Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form

Section 1. General administrative information

Salmon River Production Program

Bonneville project number, if an ongoing project 9705700

Business name of agency, institution or organization requesting funding
Shoshone-Bannock Tribes

Business acronym (if appropriate) SBT

Proposal contact person or principal investigator:

Name	David L. Arthaud
Mailing Address	P.O. Box 306
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Phone	(208) 238-3758
Fax	(208) 238-3742
Email address	chnook@ida.net

Subcontractors. List one subcontractor per row; to add more rows, press Alt-Insert from within this table

Organization	Mailing Address	City, ST Zip	Contact Name
subcontractor, organization not yet selected			
BPA Services			

NPPC Program Measure Number(s) which this project addresses.
7.0A, 7.4O

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

If the project type is "Watershed" (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

The Salmon River Production Program (SRPP) has been specifically reviewed and included in the:

PAC (Production Advisory Committee). 1996. *United States v Oregon.* Fifteen High Priority Projects List. Project number 10: Salmon River Production Program. Portland, Oregon.

The integral need and approach that the SRPP is to be designed to address and fulfill is found in:

Appendix B of:

Parties to *United States v Oregon.* 1988. Columbia River fish management plan. October 7, 1988. Columbia Inter-Tribal Fish Commission. Portland, Oregon.

Chapter 7: Artificial Production pp 95-115. Hatchery programmatic and facility improvement and mitigation is mandated throughout and especially at pp 109-110 Critical Research in Artificial Production and pp 114-115 (Table 7-2) use acclimation and volitional releases ... and acclimation facilities. In:

NMFS. 1997. Snake River Salmon Recovery Plan. Pre-release draft. USDOC NOAA National Marine Fisheries Service. August 8, 1997. Portland, Oregon.

Chapter 5 hatchery reform and improvement mandated throughout, including increasing Snake River acclimation facilities and upriver production (Table 5.6). In:

CRITFC (Columbia River Inter-Tribal Fish Commission). 1996. *Wy-Kan-Ush-Mi Wa-Kish-Wit*: Spirit of the Salmon. The Columbia River anadromous fish restoration plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Vols. I and II. Portland, Oregon.

Specific numbers and populations needed for production and recovery throughout:

Kiefer, S.A., P.K. Cowley, and M. Rowe. 1990. Salmon River subbasin plan. Final Report to the Northwest Power Planning Council. NPPC, Portland, Oregon.

Artificial Production discussions and their net negative effect on wild salmon and steelhead runs in:

ISG (Independent Scientific Group). 1996. Return to the River: restoration of salmonid fishes in the Columbia River ecosystem. Development of an alternative conceptual foundation and review and synthesis underlying the fish and wildlife program of the Northwest Power Planning Council. Portland, Oregon.

Adult return shortfalls, problems, and suggested remedial measures for existing hatcheries in:

IHOT (Integrated Hatchery Operations Team). 1996. Hatchery Audits. Available from Columbia Basin Fish and Wildlife Authority. Portland, Oregon.

Subbasin.

Lower Snake River; Salmon River

Short description.

Reform existing hatchery practices, programs, and facilities and Implement less expensive, more effective, closer to natural programs and facilities to aid the recovery of anadromous fish.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	+	Construction		Watershed
	Resident fish	+	O & M	0	Biodiversity/genetics
	Wildlife	X	Production	+	Population dynamics
	Oceans/estuaries	+	Research		Ecosystems
	Climate	+	Monitoring/eval.		Flow/survival
	Other	+	Resource mgmt	+	Fish disease
			Planning/admin.	X	Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

recover, reintroduce, reform existing hatchery practices, hatchboxes, low-tech broodstock holding, low-cost acclimation/volitional release facilities

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Implement/construct low-cost streamside broodstock holding, incubation (hatchboxes), acclimation, and volitional release program and facilities	a	Complete Master Plan
		b	Complete NEPA Documentation by preparing an EA for the programmatic and construction activities identified in Task 1a
		c	Document ESA Compliance for listed species recoveries of the programmatic and construction activities identified in Task 1a
		d	Complete Engineering Feasibility and Design Plan for facilities identified in Task 1a
2	Improve/Reform existing hatchery programs and facilities	a	Complete Master Plan
		b	Complete NEPA Documentation by preparing an EA for the programmatic and construction activities identified in Task 2a
		c	Document ESA Compliance for listed species recoveries of the programmatic and construction activities identified in Task 2a
		d	Complete Engineering Feasibility and Design Plan for facilities identified in Task 2a

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	04/1998	09/1999	50
2	04/1998	09/1999	50

Schedule constraints.

Master Plan must be completed before NEPA documentation, ESA Compliance, and Engineering Feasibility and Design Plan

Completion date.
2015 or upon restoration of anadromous fish runs in the Snake River Basin

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel	2.3 FTE's (director, biologist, technician)	$76,000
Fringe benefits	@ 34% FTE's	$25,800
Supplies, materials, non-expendable property	Office supplies, field supplies, miscellaneous expenses	$12,000
Travel		$20,000
Indirect costs	@ 26% FTE's and Fringe	$26,500
Contracts and Services	Subcontractor, BPA services, sundry writing, legal, and permitting fees; contingent upon planning and research needs identified in 1998	$60,000
TOTAL		$220,300

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	$1,200,000	$250,000	$250,000	$250,000
O&M as % of total	13%	50%	40%	40%

Section 6. Abstract

f. How results will be monitored and evaluated

The SRPP was approved for initial BPA funding in FY1998. Currently the planning phases and deliverables of this project are being contracted. Upon completion and approval of these plans, specific detail of project actions and deliverables will be identified to fulfill final numeric objectives. The overall goal of the project is to use lower cost, more effective, closer to natural production measures to reintroduce and recover anadromous fish runs in vacant and under-seeded habitats of the Snake and Salmon rivers. This goal is supported and mandated by measures 7.0A and 7.4O and the basic intent and policy of the 1994 FWP. Based upon the latest scientific principles and theory for the rapid recovery of endangered native fish species, proposed methods involve reforming and redirecting existing hatchery programs and practices in conjunction with the addition of small, relatively inexpensive (streamside or satellite) facilities to hold broodstocks and enable volitional releases of naturally acclimated fish. Expected outcomes include saving millions of dollars on existing production programs that are not conserving or recovering listed species, while redirecting production efforts to reverse declining wild populations and toward successful recoveries within 20 to 50 years. A stringent monitoring and evaluation plan will be designed in the master planning process with the critical objectives measured being increased rates and numbers of adult returns

and increased numbers of natural spawners.

Section 7. Project description

a. Technical and/or scientific background.

The Salmon River, tributary to the Snake River in central Idaho, is one of last major subbasins in the Columbia River Basin and the lower United States that has not been dammed. Once numbering in the millions, wild salmon and steelhead runs in the Snake and Salmon subbasins have declined to <80,000 fish and recently (since 1991) been listed as either threatened or endangered by the NMFS.

The Salmon subbasin is at the heart of the Shoshone-Bannock Tribes aboriginal territory. These Tribes' heavy reliance on mountain sheep and salmon of the region is especially well documented (Hanes 1995). The Shoshone-Bannock Tribes were removed to the Fort Hall Indian Reservation, located in southeastern Idaho near Pocatello, with the Fort Bridger Treaty of 1868, yet have reserved treaty rights to hunt, fish, and gather on unoccupied lands of the United States. Even though severely depressed, anadromous fish runs returning to the nearby Salmon River still represent an important subsistence resource to the Tribes.

The primary goal for the project is to use adaptive (closer to natural) production measures to reintroduce and recover anadromous fish runs in currently vacant and under-seeded habitats of the Snake and Salmon rivers.

In 1995 a comprehensive program was approved under emergency terms by the Northwest Power Planning Council (NPPC) to initiate, low-cost, low-tech alternatives and improvements to existing hatchery programs. Prior to this the program had been reviewed and supported as high priority by the U.S. v Oregon Production Advisory Committee. Further in 1997 Congress has requested the NPPC to comprehensively review production activities in the Columbia River Basin.

Currently, the SBT are in the process of contracting a statement of work with the BPA for the SRPP in 1998. Primary work for 1998 and 1999 will involve the research, development, and approval of master plans, ESA compliance, engineering feasibility and designs, and NEPA documents for construction and implementation of low-tech facilities (for taking and incubating eggs, acclimation and volitional release facilities, and production reviews and reforms to existing mitigation/enhancement hatchery programs).

b. Proposal objectives.

Because the SRPP is not yet contracted for 1998, project specific long-range numeric outcomes are not yet known for out-years. However, primary objectives for 1998 that will continue through 1999 for the purposes of this review are:

Objective 1 Implement/construct low-cost streamside broodstock holding, incubation

(hatchboxes), acclimation, and volitional release program and facilities

Tasks a Complete Master Plan

b Complete NEPA Documentation by preparing an EA for the programmatic and construction activities identified in Task 1a

c Document ESA Compliance for listed species recoveries of the programmatic and construction activities identified in Task 1a

d Complete Engineering Feasibility and Design Plan for facilities identified in Task 1a

Objective 2 Improve/Reform existing hatchery programs and facilities

Tasks a Complete Master Plan

b Complete NEPA Documentation by preparing an EA for the programmatic and construction activities identified in Task 2a

c Document ESA Compliance for listed species recoveries of the programmatic and construction activities identified in Task 2a

d Complete Engineering Feasibility and Design Plan for facilities identified in Task 2a

c. Rationale and significance to Regional Programs.

Numerous calls for hatchery review and reform in the Columbia River Basin have been made by many entities through many forums. Some of these include the ISG 1996; Congress through the NPPC 1997; NPPC through the FWP 1994; U.S. v Oregon Parties through Appendix B of the CRFMP and the High Priority Projects of the PAC; NMFS through the Draft Snake River Salmon Recovery Plan 1997; Indian Tribes through the above forums and the Spirit of the Salmon 1996.

Even though subbasin plans are not fully updated and complete the Salmon River Subbasin Plan (Kiefer et al. 1990) outlines specific production and carrying capacity needs which the actions of the SRPP will be designed to achieve.

The SBT through these forums and plans have proposed the SRPP for BPA funding through the NPPC's FWP and are contracting planning for the work in 1998; relationships and this project's coordination and cooperation with other co-managers and projects will be identified in the master plan.

d. Project history

In 1995 a comprehensive program was approved under emergency terms by the Northwest Power Planning Council (NPPC) to initiate, low-cost, low-tech alternatives and improvements to existing hatchery programs. Prior to this the program had been reviewed and supported by the U.S. v Oregon Production Advisory Committee. Further in 1997 Congress has requested the NPPC to comprehensively

review production activities in the Columbia River Basin.

Currently, the SBT are in the process of contracting a statement of work with the BPA for the SRPP in 1998. Primary work for 1998 and 1999 will involve the research, development, and approval of master plans, ESA compliance, engineering feasibility and designs, and NEPA documents for construction and implementation of low-tech facilities (for taking and incubating eggs, acclimation and volitional release facilities, and production reviews and reforms to existing mitigation/enhancement hatchery programs).

e. Methods.

Throughout the demise of Snake River anadromous fish, hatcheries have been viewed as technological fixes to support species and fisheries and to justify the destruction of habitat. From the beginning a few, and more recently many, realize the folly of permanently attempting to artificially produce wild animals in lieu of providing sufficient habitat and protection for the preservation of natural populations.

As the last anadromous salmonids in the Snake and Columbia rivers are now threatened or endangered with extinction, technological dreams of the past must be redirected away from the continuation of negative impacts and toward positive programs to provide species recovery. Fish propagation should not be eliminated altogether, because already in headwater areas and from areas above migration barriers the only genetic stock for entire species or runs are maintained in hatcheries (e.g., Redfish Lake sockeye, Powder River spring chinook).

Runs and populations from numerous tributaries throughout the Salmon River subbasin are locally extinct or approaching functional extirpation so that breeding populations cannot replace themselves or spread into vacant habitats. If hatcheries were used in the most natural manner possible to produce the highest quality offspring, these fish could be reintroduced into vacant habitats and allowed to return and spawn naturally. A program like this should reduce the risk of species extinction and enable a quicker overall recoveries.

In general, the critical need and base methods to be researched and implemented can be found as both production problems that should be corrected and as production activities that should be pursued. These range from incredibly obvious practices and problems (annually removing fish from the wild to meet smolt production goals when hatchery adults fail to return in numbers large enough for replacement, polluted water supply, disease) to the more subtle (domestic selection, increased or delayed development, timing and size of release). The SRPP will be designed to pilot, evaluate, and implement programs using existing hatcheries and construct facilities, if necessary, to aid species recoveries.

f. Facilities and equipment.

This level of detail is not yet known and will be identified in the SRPP Master Plan.

g. References.

CRITFC (Columbia River Inter-Tribal Fish Commission). 1996. *Wy-Kan-Ush-Mi Wa-Kish-Wit*: Spirit of the Salmon. The Columbia River anadromous fish restoration plan of the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes. Vols. I and II. Portland, Oregon.

Hanes, R.C. 1995. Treaties, Spirituality, and Ecosystems: American Indian interests in the northern intermountain region of western North America. Walla Walla, Washington: Interior Columbia Basin Ecosystem Management Project; August 1995: 374 [iv], 99, 30, 2, [18] p.

IHOT (Integrated Hatchery Operations Team). 1996. Hatchery Audits. (available from Columbia Basin Fish and Wildlife Authority or Northwest Power Planning Council. Portland, Oregon.)

ISG (Independent Scientific Group). 1996. Return to the River: restoration of salmonid fishes in the Columbia River ecosystem. Development of an alternative conceptual foundation and review and synthesis underlying the fish and wildlife program of the Northwest Power Planning Council. Portland, Oregon.

Kiefer, S.A., P.K. Cowley, and M. Rowe. 1990. Salmon River subbasin plan. Final Report to the Northwest Power Planning Council. NPPC, Portland, Oregon.

NMFS. 1997. Snake River Salmon Recovery Plan. Pre-release draft. USDOC NOAA National Marine Fisheries Service. August 8, 1997. Portland, Oregon.

PAC (Production Advisory Committee). 1996. *United States v Oregon.* Fifteen High Priority Projects. Project number 10: Salmon River Production Program.

Parties to *United States v Oregon.* 1988. Columbia River fish management plan. October 7, 1988. Columbia River Inter-Tribal Fish Commission. Portland, Oregon.

Section 8. Relationships to other projects

The SRPP will have interdependent relationships with: NMFS for the production of listed species for recovery and reform of existing programs that currently produce or impact listed species; U.S. v Oregon parties through the PAC and CRFMP (especially Appendix B); the NPPC through IHOT, BPA funding, hatchery reviews, and subbasin plans; USFWS through LSRCP funding of existing hatcheries; Idaho Power Company through FERC mitigation hatcheries; state

of Idaho through all preceding forums and as co-managers.

The scope and description of relationships will be identified in the SRPP Master Plan.

Section 9. Key personnel

Salmon River Production Program

Program Director:	**David L. Arthaud**	
Duties:	Direct and assist production biologist in research, management, and implementation of program.	
Production Biologist:	**To Be Hired in 1998**	
Duties:	Complete planning and permitting process; manage and implement program; hire technicians with experience in fish production and extensive knowledge of Salmon River habitat.	
Qualifications:	Master's Degree with five years relevant work experience.	
Total FTE:	2.3 FTE includes:	1-Program Director (0.3) 1-Production Biologist (1) 1-Technician (1).

David L. Arthaud, Anadromous Fisheries Biologist

EDUCATION

M.S. in Fisheries Resources, 1992 University of Idaho Moscow,ID
Thesis:"Size Selectivity and Capture Efficiency of Electrofishing, Gillnetting, and Beach Seining in Lower Granite Reservoir, Washington"

B.S. in Fish and Wildlife Management, 1989 University of Missouri Columbia,MO

SUMMARY OF QUALIFICATIONS

Fish & Wildlife Biologist
Expertise in ecology and implementation of science and technology to preserve and recover ecosystems. Five years experience proposing, designing, budgeting, implementing, monitoring, and evaluating native species recovery and habitat restoration projects. Tribal technical representative to: Native Species Recoveries (resident and anadromous fish), Federal Energy Regulatory Commission (FERC) relicensings, Federal Columbia River Power System (FCRPS) actions, National Marine Fisheries Service (NMFS) review process, U.S. v Oregon Technical Advisory Committee and Production Advisory Committee, CBFWA Integrated Hatchery Operations Team, Fish Passage Center Board of Directors and Advisory Committee. Responsible for technical support to natural resource policy: writing, coordinating, and negotiating technical aspects of fish and wildlife recovery plans, options, and agreements with federal and state agencies to further tribal goals, resources, and protect treaty rights.

EMPLOYMENT

Anadromous Fisheries Biologist Mar. 1997 - Present Shoshone-Bannock Tribes
Harvest Biology, Production Biology, ESA Recovery

Resident Fisheries Program Manager Jan. 1993 - Mar. 1997 Shoshone-Bannock Tribes
Clean Water Act and Watershed Restoration Initiatives, Fort Hall Reservation Stream Restoration (BPA 920010), Upper Snake Native Fish Hatchery (BPA 950600)

REPORTS & PUBLICATIONS

Taki, D. and D.L. Arthaud. 1993. Fort Hall Reservation Stream Enhancement: Shoshone-Bannock Tribes 1992 Annual Report to the Bonneville Power Administration, Project 92-10, Portland, Oregon.

Arthaud, D.L. and D. Taki. 1994. Fort Hall Reservation Stream Enhancement: Shoshone-Bannock Tribes 1993 Annual Report to the Bonneville Power Administration, Project 92-10, Portland, Oregon.

Arthaud, D.L., C.G. Colter, J. Gregory. 1995. Fort Hall Reservation Stream Enhancement: Shoshone-Bannock Tribes 1995 Annual Report to the Bonneville Power Administration, Project 92-10, Portland, Oregon.

Arthaud, D.L., C.G. Colter, D.C. Moser. 1996. Fort Hall Reservation Stream Enhancement: Shoshone-Bannock Tribes 1996 Annual Report to the Bonneville Power Administration, Project 92-10, Portland, Oregon.

Section 10. Information/technology transfer

Information and progress will be provided and distributed to the public through Annual Reports to the Bonneville Power Administration.